

REMARKS

The Office Action dated November 17, 2005 has been received and its contents carefully noted. In view of the following remarks, reconsideration of the rejection of claims 1-3, 5 and 6 is respectfully requested. As previously, claims 1-3, 5 and 6 are presently pending in the instant application.

Initially, Applicant wishes to thank Examiner Chambers for the courtesy extended to Applicant's representatives during the interview on January 18, 2006. The following are Applicant's comments with respect to the rejection of claims 1-3, 5 and 6, which were discussed during the personal interview.

Rejections under 35 U.S.C. § 102

Claims 1-3 and 5-6 are rejected under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 6,138,656 to Rice et al. Applicant respectfully traverses this rejection, because Rice et al. fails to teach each and every element recited in the claims. In particular, independent claim 1 states that the movable valve is:

operative . . . to shift from a first state for causing said first gas passage to be opened and said second gas passage to be closed to supply the gas obtained in said outlet passage to said loading chamber through said first gas passage to a second state for causing said first gas passage to be closed and said second gas passage to be opened to apply the gas obtained in said gas outlet passage to said pressure receiving portion through said second gas passage.

As the present specification states when gas "is fed to the loading chamber through the first gas passage, the second gas passage is closed to prevent the situation, in which the gas flows into the second passage." (See present specification, p. 33, lines 14-18) Contrary to the claimed invention, however, Rice et al. fails to teach that gas pressure loss into a second passage is prevented when the gas is being applied to the loading chamber.

In rejecting Applicant's claimed invention, the Examiner states that the valve 18 and the pressure regulator 19 disclosed in Rice et al. together form the movable valve as recited in claim 1. According to the Examiner, "When the portion 18 of the gas flow control mechanism is activated by a ram head 29 the passage 54 is open while the passage leading from control mechanism 19 to the piston is closed." (See Office Action, p. 2, paragraph 3.) Although the valve 18 opens to allow gas into the loading chamber when engaged by the ram

head 29, nowhere does Rice et al. disclose, or even suggest, that the passage leading from the pressure regulator 19 is closed to prevent the escape of gas to a second chamber. Indeed, as described below, the gas pressure passing through regulator 19 must be supplied to a second chamber at all times, even when the valve 18 is open to allow gas into the loading chamber.

According to Rice et al., “The second regulator 19 is a low pressure regulator which bleeds off ‘low pressure’ gas at about 80-90 psi from the high pressure chamber for use in a second pressurized gas circuit which forms the pneumatic control circuit of the gun. . . .” (See Rice et al., col. 2, lines 49-54.) According to Rice et al.,

The low pressure gas is conducted from the left hand end of the regulator 19 . . . and fed to the inlet 20 of a control valve in the form of a spool valve 21 The spool valve 21 has a spindle 23 and a pair of servos 24, 25 mounted at either end of the valve to act on the spindle. A boring in the spool valve delivers the low pressure gas to both of the servos but because servo 25 is more powerful than servo 24, it normally urges the spindle 23 to the left. . .

(See Rice et al., col. 2, lines 55-64.) As Rice et al. explains further, “when the spool valve 21 is in the rest position . . . , low pressure gas supplied to the valve 21 is directed . . . to the cylinder on the left hand side of piston 27 to urge the ram to the retracted position.” (See Rice et al., col. 3, lines 7-11, emphasis added.) When firing is triggered in Rice et al., “the electronic control circuit actuates the solenoid switch 37 to vent the servo 25” and “[s]ervo 24 then moves the spindle of the spool valve 21 so that low pressure gas is delivered to the cylinder 26 to the right of the piston 27” causing the ram 29 to engage and open poppet valve 18. (See Rice et al., col. 3, lines 18-23; col. 3, line 65-col. 4, line 2, emphasis added.)

Thus, Rice et al. teaches that the low pressure gas conducted through regulator 19 is required in the second pressurized circuit, both when the poppet valve 18 is closed with the ram in the retracted position and when the poppet valve 18 is opened by the moving ram. Indeed, the gas from pressure regulator 19 actually opens the valve 18 when the gas acts on a piston to push the ram head 29 toward the valve 18. (See column 3, line 67-column 4, lines 1-13.) Moreover, Rice et al. states that after the valve 18 is opened, “it closes under the action of gas pressure and a return spring, pushing the ram back a small way (about 1 mm) along the bore 17 where it is held by the low pressure gas acting in the cylinder 26.” (See column 4, lines 22-26, emphasis added.) This demonstrates further that the pressure regulator 19 continues to supply low pressure gas to the second pressurized gas circuit while the valve 18 is open. Hence, gas must be continuously supplied to the second pressurized gas circuit,

even when gas is being applied to the loading chamber, because the second pressurized gas circuit in Rice et al. is needed to allow the gun to function by moving the ram head in both directions.

Furthermore, because the valve 18 and the pressure regulator 19 are two separate parts, the Examiner's interpretation of Rice et al. would require some mechanism to couple the two parts so that they could work together to coordinate the passage of gas between the loading chamber and the second pressurized gas circuit. Rice et al., however, fails to disclose, or even suggest, any mechanism to couple the separate parts.

Accordingly, because the second gas passage in Rice et al. is not closed when the first gas passage is open, Rice et al. fails to disclose each and every element recited in claim 1. Indeed, the operation of the pneumatic control circuit taught by Rice et al. teaches away from closing off the pressure to the second pressurized circuit when the valve is opened to deliver air to the loading chamber. As a result, withdrawal of the rejection of independent claim 1 is in order and is respectfully requested. In addition, Applicant respectfully submits that dependent claims 2-3 and 5-6 are allowable over the teachings of Rice et al. since they depend on what is now believed to be allowable base claim 1.

Therefore, the present application is now believed to be in condition for allowance. Accordingly, it is respectfully requested that the rejection of record be reconsidered and withdrawn by the Examiner, that claims 1-3, 5 and 6 be allowed and that the application be passed to issue.

However, should the Examiner find some issue to remain unresolved, or should any new issues arise, which could be eliminated through discussions with Applicant's representative, the Examiner is hereby invited to contact the undersigned by telephone in order that further prosecution of this application can thereby be expedited.

Respectfully submitted,



Donald R. Studebaker
Registration No. 32,815

Nixon Peabody LLP
401 9th Street, N.W. Suite 900
Washington, D.C. 20004-2128
(202) 585-8000